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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,601	04/16/2001	Nobuaki Hashimoto	109279	2047

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EXAMINER

ALCALA, JOSE H

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,601

Applicant(s)

HASHIMOTO, NOBUAKI

Examiner

Jose H Alcala

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 9-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group 1, Specie 1, embodiment of figure 2 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that search and examination of the whole application can be done without serious burden because the search of the species and groups partially overlaps.

This is not found persuasive because these inventions are distinct for the reasons given in the last office action and have acquired a separate status in the art as shown by their different classification. In addition, applicant points out that claim 1 is generic to all Species 1-8. The examiner agrees with applicant and changes the status of claim 1 to be a generic claim, and is treated as such. The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference number 34. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 2, it is unclear how can “the whole of the first substrate (be) adhered to the second substrate”. Is it referring to the fact that the substrates are attached to each other, expanding on the fact that one of the substrates is larger than the other, or is it trying to say that a whole surface of the first substrate is adhered to the second substrate.

Regarding Claim 3, lines 7-11 are not clear regarding how the substrates are located in relation to each other, and their respective elements.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5,7,8 are rejected under 35 U.S.C. 102(b) as being anticipated by Perkins et al. (US Patent No. 5,239,448).

Regarding Claim 1, Perkins teaches an interconnect substrate wherein: a first substrate (reference number 8) on which a first interconnect pattern (reference number 12) is formed and a second substrate (reference number 2) on which a second interconnect pattern (reference number 6) is formed are disposed in superimposition; at least one of the first interconnect pattern and the second interconnect pattern has a mounting region (reference number 33) for an electronic chip; and the first interconnect pattern and the second interconnect pattern are electrically connected (See Figure 1).

Regarding Claim 2, as best understood by the examiner, Perkins teaches that the second substrate (reference number 2) is larger than the first substrate, and the whole of the first substrate is adhered to the second substrate.

Regarding Claim 3, as best understood by the examiner, Perkins teaches that the first interconnect pattern (reference number 12) is formed on one surface of the first substrate (reference number 8); the second interconnect pattern (reference number 6) is formed on one surface of the second substrate; and a surface of the first substrate opposite to the surface on which the first interconnect pattern is formed and the surface of the second substrate on which the second interconnect pattern is formed are disposed to oppose each other (See figure 1)

Regarding Claim 4, Perkins teaches that a plurality of through-holes are formed in the first substrate (reference number 10), and the first interconnect pattern and the second interconnect pattern are electrically connected via the through-holes (See Figure 1).

Regarding Claim 5, Perkins teaches that the first interconnect pattern passes over the through-holes; the through-holes are positioned over the second interconnect pattern; and a conductive material contacting the first and second interconnect pattern is provided within the through-holes (See Figure 1)

Regarding Claim 7, Perkins teaches that a plurality of through-holes are formed in the second substrate (Reference numbers 3,38), for the formation of a plurality of external terminals electrically connected to the second interconnect pattern and projecting from a surface of the second substrate opposite to the surface on which the second interconnect pattern is formed.

Regarding Claim 8, Perkins teaches that the through-holes formed in the first substrate and the through-holes formed in the second substrate are formed in communicating positions (See figure 1 where the fourth vias, from left to right, of each substrate are aligned).


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed invention: Desai (US Patent No. 5,004,639), Ozaki (US Patent No. 4,817,280), Kobayashi et al. (US Patent No. 4,914,259), Boggs (US Patent No. 4,935,584), Kuramochi et al. (US Patent No. 6,252,176), Kober et al. (US Patent No. 5,142,448) and Neugebauer, deceased et al. (US Patent No. 5,384,691).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

JHA
January 13, 2003